

Remarks/Arguments

Applicant thanks Examiner Ortiz for her careful examination of the application and the clear explanation of the claim rejections. In response to the Office Action of March 14, 2006, applicant amends this application as follows:

1. Claims 1-15, 19, and 20 are canceled from this examination.
2. Claim 16, 17, and 18 are amended to incorporate all the limitation of their base claim 11, and are written in independent form.

Applicant respectfully submits that claims 16-18 stand patentable over the cited reference for the following reason:

Claim 16

Claim 16 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Freyman et al. USP 5,635,671 in view of Woosley et al., USP 5,656,549.

The Office Action recognizes that the Freyman reference does not teach a bridge insert, but argues that Woosley teaches the limitation of claim 16 and further sets forth reasons for combining Woosley with Freyman. This argument is not supported by the references.

Copied below is the section set forth in the Office Action as evidence that Woosley teaches the limitation of claim 16:

A protective layer, blocking layer, or barrier layer 22 is disposed, positioned over, or adjacent to a portion of chase 11, a portion of sidewalls 13, 15, and 20, a portion of insert 14, a portion of cavity 12, a portion of substrate 19, and a portion of gaps 16 and 21. Layer 22 serves as a bridge for an encapsulation material or mold compound 27 over gaps 16 and 21. Layer 22 protects gap 16 and 21 by preventing or blocking mold compound 27 from entering or dogging gaps 16 and 21 as described hereinafter. Layer 22 can be a disposable or temporary layer that should overlap each of chase 11 and substrate 19 by at least one millimeter to ensure that layer 22 is an effective bridge or barrier for gaps 16 and 21. Layer 22 can be provided or positioned in place by using manual labor or by using an automated film application system, as known in the art, either before or after device 17 is disposed within cavity 12. Layer 22 should remain chemically and mechanically stable during the high temperatures and pressures of the molding process. Typical clamping pressures for

chases 11 and 23 range from about fifty to five hundred MegaPascals (MPa); typical mold injection pressures range from about three to fifteen MPa; and typical molding temperatures range from about one hundred fifty to one hundred ninety degrees Celsius. Mold compound 27 should not be able to penetrate through or puncture layer 22. However, layer 22 is preferably flexible or slightly deformable during the molding process in order to form a reliable seal between chase 11 and chase 23. Layer 22 can have a thickness of approximately twenty-five to one hundred twenty-five microns. Layer 22 can be comprised of a flexible polyimide material including, but not limited to, Kapton™ tape or Upilex™ tape, which are commercially available from the DuPont Corporation of Wilmington, Del. and from UBE, Incorporated of Ube City, Yamaguchi, Japan, respectively. Alternatively, layer 22 can be comprised of a metallic foil or other appropriate thin film.¹

Applicant respectfully submits that this paragraph does not teach a bridge insert that comprises a ceramic bridge insert that includes a metal oxide composite.

Not only does the cited section of the Woosley reference fail to disclose a ceramic bridge insert that include a metal oxide composite, the entire Woosley reference does not disclose this limitation.

Because both references do not disclose this limitation in claim 16, applicant respectfully submits that the Office Action fails to establish a prima facie case of obviousness against claim 16. Therefore claim 16 stands patentable over the cited references.

Claims 17 and 18

Claims 17 and 18 stand rejected on the same ground and the Office Action sets forth the same evidence supporting its 103 rejection against claim 17 and 18.

Applicant respectfully submits that the 103 rejection against both claims 17 and 18 are improper because as explained relating to claim 16, the Woosley reference does not disclose a ceramic bridge insert that includes either metal

¹ USP 5,656,549, col. 2, l. 61 – col. 3, l. 28.

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nitride or silicon nitride doped with titanium nitride, as required in claim 17 and claim 18 respectively.

In conclusion, applicant respectfully submits that this application is in allowable form and applicant respectfully requests further examination of this application and timely allowance of all pending claims.

Respectfully submitted,
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